

Western New York Regional Information Center IT Leaders Briefing: Mobile Learning Devices/Tablet Integration

Prepared by the

Western New York Regional Information Center

Revised 8/12/2012

WNYRIC IT Leaders Brief: Tablet Integration Strategies 2012

Introduction:

The conversations regarding the safety and effectiveness of allowing Mobile Learning Devices/ tablets into our K-12 schools has been very active the past 18 months. For the purpose of this revised document ONLY MLD/tablets are being considered:

- iOS 5.x (Apple iPad 2+) - specifically
- Android 3.x – tablets only - peripherally

We can observe the business models thus far and with the help of Gartner and InfoTech as well as other sources state plainly that attempts by businesses and school districts to ban, discourage and control the use of these consumer driven devices have been unenforceable. The more the IT Departments push the organization standards the more employees will go outside to find the tools they want which opens up security holes. We are also aware that a Mobile Device Management (MDM) software solution is a tool which will assist in many areas, but is not an all encompassing solution at this stage.

Issues for Consideration:

The administrative leadership staff in **K-12** must be cognizant of how these devices are being utilized in the classroom setting as we believe instruction tablet devices will be the “norm” within 5 years. The following must be considered (Gartner):

- Firmly and directly connect the use of tablet owned devices to the academic purpose of the classroom.
- Take steps to ensure that no student is disadvantaged by lack of technology, especially if you are considering initiating an active or required Bring Your Own Device (BYOD) policy.
- Ensure the institution's infrastructure is sufficiently robust to support a greatly increased number of personal user devices.
- Implement and be prepared to enforce a strong, coherent acceptable-use policy (AUP) as a condition to participate in the tablet environment.

Most research from researchers at Gartner and InfoTech revolves around higher education, yet is applicable to K-12. The tablets provide the following types of advantages for students from traditional laptop carts or labs:

- they are mobile
- weigh less
- have much more efficient power consumption
- have a flat (consistent) configuration
- Small in size and provide e-reader capabilities.
- These devices also **have access to vast stores of content**, which can hold thousands of digital learning objects and increase the number of ways to engage students in instruction.
- The ease of accessing high definition video through streaming (no downloads necessary) demonstrating highly effective instructional techniques is being mentioned as rationale for integration of these devices.

Some concerns raised in the research are:

- *Lack of a physical keyboard*
- *Specific concern of an iPad include the lack of support of Flash (for common website video display)*
- *Lack of USB port*
- *Considerations about printing*
- *Considerations for reading existing documents in Microsoft office need to be discussed, although Microsoft Office for the iPad is on the current roadmap for a Fall2012 release.*

Management of Resources:

Wireless Connection Considerations:

Schools must ensure that the infrastructure within the institution can accommodate a greatly increased number of personal user devices that will seek access throughout the campus network, without negatively impacting network performance overall. Institutions considering mobile device integration need to thoroughly assess the number and placement and configuration of Wi-Fi access points as more and more faculty members and students begin to use mobile devices and rich media in their classes. The consideration has to be made for wireless **coverage vs throughput** is the key and a different way for all of us to think in regards to the wireless network. Using access points on iPad carts can be considered (2 per cart) with specific planning so interference with existing stationary wireless devices is not affected.

Bandwidth:

New wireless only tablet devices are designed to minimize power by using a weak radio signal with a single antenna. This causes wireless network design and connectivity challenges. Therefore existing wireless networks will need to be redesigned to meet the increased expectations. A wireless site survey, designed around specific parameters and usage scenarios, should be conducted in prior to the introduction of devices on wireless networks. The WNYRIC Wireless Site Survey Service (Service Code 650.840.60) is strongly recommended.

Adapted Industry Conclusions for WNYRIC Customers:

WNYRIC Support and Vision:

The WNYRIC encourages the use of device-neutral applications for the classroom and school district staff and administrators which can access necessary applications and data securely and affordably. The mobile learning device (MLD) or tablet has **certain shortcomings** which need to be communicated effectively with solution scenarios to our customers. It is **not** believed that MLD/tablets are an **effective replacement** of a laptop or desktop at this time, although the next six months will produce additional enterprise solutions.

- **Governance and Risk** - Acceptable Use Policies, auditor acceptance, insurance compliance and other policies and regulations as well as the District Code of Conduct should be in place and verified to include mobile device use.
 - Erie 1 BOCES Policy Services can help provide the following:
 - **Bring Your Own Devices (BYOD)** policies which are specific to personally owned tablets which have access to school district data should have an additional policy which states that the technology department will be notified immediately if the device is lost or stolen so access to school district email; data, etc can be removed and/or locked.

- **Updated Acceptable Use Policies, District regulations** or Code of Conduct **Content filtering solutions** for K-12—
Lightspeed filters Android 3.x and iOS 5.x devices. The WNYRIC converted all districts who are in our Content Filtering Service to Lightspeed, which filters both wireless and cell signals, during the summer of 2011.
 - **The caveats include:**
 - **No additional applications necessary if using with wireless (not cell signal) in the school district.**
 - **If the device is going home with students then the Lightspeed browser replacement is a mandatory install which forces content filtering of the internet from any place at anytime. If the device is going home with staff, then the district can enforce filtering using the same process as students; or the district can choose to sign a waiver with Erie 1 BOCES/WNYRIC.**
- **Other Security Recommendations:**
 - Guest or BYOD wireless network segregation is recommended.
 - Create an enticement that forces compliance by controlling what can be controlled; for example;- wireless access.

Distribution of Applications for Mobile Learning Devices:

The WNYRIC supports a collaborative Volume Purchasing Program through Apple. Currently there is no such option for Androids. Continued investigation of Microsoft 8 is ongoing by the WNYRIC teams.

The following are considerations for Apple iOS 5 (iPad, iPhone, iPod Touch) application purchasing and distribution:

- Control of district purchased Apps requires running the iPads in a “supervised” mode through the Apple Configurator Utility on an Apple 10.7 OS (minimum) Client machine.
- If the school district chooses to install applications OTA (Over The Air) then the purchase of an APNS (Apple Push Notification) Certificate must be purchased by the school district locally.
- iTunes account design needs to be planned and considered based on district application purchase policy and application inventory reconciliation policies.
- Who controls the VPP voucher(s) has to be considered.

The following components for tablet integration can be managed manually with assignment of tasks to school district staff member(s) or a Mobile Device Management solution may be implemented.

Tech support

- Synching
- Charging (station, USB, cart)
- Loading apps
- Filtering
- Profiles
- iOS (Apple?) Configuration Utility

Teacher Distribution

- Professional Development
- Storage – where are the files, etc
- Application purchase and utilization rationale
- Projects and lessons

Apps and Books

- Free apps
- Volume Purchasing Program
- In App purchases & Books (Consumables?)

iTunes

- Accounts – multiple?
- Access –single administrator?
- Notify WNYRIC Staff of IP addresses or email domain in order to alert Apple to remove fraud protection.

District policies

- AUP
- Student Code of Conduct
- Sign off for taking home – staff or student

The Specific WNYRIC Supported Solutions through COSERs:

CSLO -iPad , Samsung Galaxy, Acer transformer tablets are listed as approved devices through CSLO with approval of Michelle Okal-Frink. A review and verification and meeting with Michelle Okal-Frink is necessary prior to project approval.

Standards Committee – Approved MLD/tablets with iOS 5.x and Android 3.1+ are listed as approved through Management Services. A review and verification with Jill Holbrook is necessary prior to project approval if purchase through 650.xxx is requested. The review and verification and meeting with Michelle Okal-Frink is necessary as well.

Evaluation of Mobile Device Solutions for WNYRIC:

Mobile Device Management Service on Mobile Learning Devices (MLD)/Tablets provides automation of many of the components which can be done manually.

The WNYRIC team, in conjunction with other RICs across NY State, went through an extensive evaluation process of dozens different MDM products in March through May 2012. This process included product demos, trial installations, independent research firm review, and a state wide RFP and review prior to award of contracts. The areas below noted by vendor were specific requests in a

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Mobile Device Management solution: and the vendor's response. **Be aware that the products continue to mature and the specifics below were accurate as of July 2012.** The meeting with Michelle Okal-Frink will provide the most up to date vendor information. Also Apple continues to expand the resources they offer to support iPads through Lion and Mountain Lion server which should also be considered.

	JAMF	Notify	Air Watch	
Platform Support	iOS only	iOS , Android and Blackberry	iOS, Android, Blackberry	
Group Management and Provisioning	Cloud JSS	Web based dashboard	Web	
Automated Provisioning	installs certificates on the iOS device	User must obtain manually from iTunes Store	Yes, through authentic Safari	
Group Creation	Yes	Manually through program	Yes through AD	
Applying Policies by Group	Yes JAMF is wireless with the ability to address groups and manage several devices	Not at this time	Yes	
Ability to control or override policy conflicts	Yes	Yes	Yes	
Service Management and Reporting				

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Visibility into the device and network performance	no	APNS for iOS, and Android device checking in and realtime - very limited	Multi level - you can manage by the top level and can manage different levels - done in a hierarchical manner by role	
Basic Reporting	reports can be generated	Yes in real time 4 different views	administrators can see a daily report about devices that have or have not checked in - more robust	
Inventory Management	warranty data, hardware DNA, iOS version	Yes, email alerts, main console window alert	Through the use of Secure Remote Access services inventory detail is sent to the server.	
Mobile Application Management				
Visibility of Installed Apps	All payloaded apps in reports	Yes	secure content locker - you can distribute content through their own custom app - allows a central repository that administrators can manage	
Ability to Whitelist or Blacklist	no	Yes	Yes	
Remote removal of apps	ability to remote wipe - needs to be awake	ability to remote wipe - needs to be awake	ability to remote wipe - needs to be awake	
OTA Configuration Profile Enforcement				

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Customized views of the Management Interface based on role	yes	Yes	Yes	
Ease of creating and changing roles	Through groups	Yes - dragging or moving	enroll and set up based on grades, etc - everything that goes into the profile will enroll	
Security Management				
Remote wipe with confirmation	ability to remote wipe - needs to be awake	Yes	updating silently without user intervention, automated alerts, automated reports	
Remote lock with confirmation	The remote lock locks the device so someone who doesn't know the passcode can't get it - if there isn't a passcode anyone can get back in	Yes	Yes	
Select wipe	Yes - by groups	Yes	Yes	
Jailbreak detection, notification and remediation	no	Yes	Yes	
Master Administrative password	passcode and clearing passcodes	Yes	Yes	
Segregation of business and personal data	Yes	yes	Yes	

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Authentication methods in place for synchronization.	Apple Configurator Tool	LDAP link	Airwatch app - can enroll devices in that manner right on the device - enter the group ID - install profile	
Availability of compliance reports.	no	Yes	administrators can see a daily report about devices that have or have not checked in - more robust	
Asset Inventory	and personal information from device			
Including IP address	no	Yes	Yes	
MAC address	no	Yes	Yes	
Serial number, etc.	Yes	Yes	Yes	
End User Messaging				
Broadcasting messages	Not at this time	Yes, email, text or to the device	Yes	
VPP Purchasing				
License tracking	Yes	Yes	Yes	
App store recommendations	Yes	Yes	Yes	
Management of Apps Cloud				
Public or Private	On Premise server minimum MAC 10.6 - one Mac Mini can handle 100 devices - uses iTunes for apps	In Cloud or On Prem - no difference in price if On Premise then SQL cluster	On Prem - Application, Database and IIS server and .NET and MS messaging queues and MS 2008 or higher database - virtual okay	
Integration				

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Web based interface with any LDAP environment	Binds the server with the AD and creates a PKI with certificate authority. JSS server in Cloud	Auto enrollment through "Touchdown" , LDAP through email or policy suite	Exchange, Certificate services, LDAP	
Performance Monitoring				
Reporting capabilities on network	no	Real time only	Yes - or via SMS, console messages, , email	
Application usage	yes/ iTunes	Yes		
Proactive alerting	no	Yes	Yes - or via SMS, console messages, , email	
Advanced Functionality				
Browser Control				
Disable browser features, and whitelist or blacklist sites on mobile browser	no	Yes	Yes	
App Portal				
Portal for custom apps that are built in house	yes/iTunes	Yes	Yes	
Help and Service Management	?	Yes	Yes	
Help desk integration, end--user notifications, and remote control capabilities	?	Yes	Yes	

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Location Services				
Ability to use GPS to locate individual devices and view devices on a map	yes	Teachers – Able to manage tablets for their classroom and locate any lost tablets. Students - Using self service portal could locate a missing tablet Administrators – The ability to monitor, manage, locate, control all mobile devices and tablets.	Yes	

WNYRIC Service Detail:

Service Code detail on 550.066 or 650.066 can be found at www.wnyric.org under the For Districts link and then click on Service Directory.